

CLAIMS

[1] A method for preparing crosslinked polysaccharide microparticles, which comprise the following steps:

- 5 a) preparing a dilute solution containing a polysaccharide derivative having a crosslinkable functional group(s);
- b) dispersing the solution to form microparticulate droplets; and
- 10 c) concentrating the solution contained in the droplets to facilitate crosslinking reaction of the polysaccharide derivative.

[2] The method according to claim 1, wherein the polysaccharide is hyaluronic acid.

- 15 [3] The method according to claim 1 or 2, wherein step b) is a step in which the solution is dispersed by spraying to form microparticulate droplets.

[4] The method according to any one of claims 1 to 3, wherein the resulting microparticles have an average

20 particle diameter of 0.01  $\mu\text{m}$  to 150  $\mu\text{m}$ .

[5] The method according to any one of claims 1 to 4, wherein the resulting microparticle is a drug carrier.

[6] The method according to any one of claims 1 to 5, wherein the resulting microparticle is a sustained-release

25 drug carrier.

[7] The method according to any one of claims 1 to 6, wherein the dilute solution before the crosslinking reaction contains a drug, and the drug is held in the

microparticles obtained after the crosslinking reaction.

[8] The method according to claim 7, wherein the crosslinking reaction does not cause drug denaturation even in the presence of the drug.

5 [9] The method according to any one of claims 1 to 8, wherein the crosslinkable functional group is a mercapto group, and the crosslinking reaction is a reaction in which crosslinkages are formed by disulfide formation.

10 [10] The method according to any one of claims 1 to 8, wherein the crosslinking reaction is a reaction in which crosslinkages are formed by addition reaction between a mercapto group and an unsaturated bond.

[11] The method according to any one of claims 1 to 8, wherein the crosslinking reaction is a reaction in which  
15 crosslinkages are formed by reaction between a hydrazide group and an activated carboxylic acid ester.

[12] A crosslinked polysaccharide microparticle, which can be prepared by a method comprising the following steps:

- a) preparing a dilute solution containing a  
20 polysaccharide derivative having a crosslinkable functional group(s);
- b) dispersing the solution to form microparticulate droplets; and
- c) concentrating the solution contained in the droplets  
25 to facilitate crosslinking reaction of the polysaccharide derivative.

[13] The crosslinked polysaccharide microparticle according to claim 12, wherein the polysaccharide is

hyaluronic acid.

[14] The microparticle according to claim 12 or 13, wherein step b) is a step in which the solution is dispersed by spraying to form microparticulate droplets.

5 [15] The microparticle according to any one of claims 12 to 14, which has an average particle diameter of 0.01  $\mu\text{m}$  to 150  $\mu\text{m}$ .

[16] The microparticle according to any one of claims 12 to 15, which is a drug carrier.

10 [17] The microparticle according to any one of claims 12 to 16, which is a sustained-release drug carrier.

[18] The microparticle according to any one of claims 12 to 17, wherein the dilute solution before the crosslinking reaction contains a drug, and the drug is held in the  
15 microparticle obtained after the crosslinking reaction.

[19] The microparticle according to claim 18, wherein the crosslinking reaction does not cause drug denaturation even in the presence of the drug.

[20] The microparticle according to any one of claims 12 to 19, wherein the crosslinkable functional group is a mercapto group, and the crosslinking reaction is a reaction in which crosslinkages are formed by disulfide formation.

[21] The microparticle according to any one of claims 12 to 19, wherein the crosslinking reaction is a reaction in  
25 which crosslinkages are formed by addition reaction between a mercapto group and an unsaturated bond.

[22] The microparticle according to any one of claims 12 to 19, wherein the crosslinking reaction is a reaction in

which crosslinkages are formed by reaction between a hydrazide group and an activated carboxylic acid ester.